



Seasonal variation in prostate-specific antigen levels: A large cross-sectional study of men in the UK

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Year: 2011
Journal: Bju International. 108 (9): 1409-1414

Abstract:

OBJECTIVE: * To assess whether a seasonal change in prostate specific antigen (PSA) levels can be detected in men recruited to a large clinical trial. **PATIENTS and METHODS:** * A total of 66 969 men aged 50-69 years were drawn from a large study conducted at general practices across the UK between 2002 and 2007. * Trigonometric algorithms and regression methods were used to assess the relationship between the time of year and serum PSA and blood pressure measurements. * We obtained local daily mean temperatures and hours of sunlight per day to assess whether these factors were potential mechanisms for seasonal variation in PSA levels or blood pressure. * The proportion of participants who would be considered clinically at risk according to their PSA or blood pressure measurement, by month, was also assessed. * The strength of associations between time of year and blood pressure were used to reinforce conclusions from the PSA models. **RESULTS:** * There was no relationship between time of year and PSA levels (PEuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.11) or between climate and PSA levels (PEuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.42). * No difference was found in the prevalence of clinically raised PSA content by month (PEuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.50). * This lack of an association with PSA content was despite our data being sufficient to provide clear evidence of an association between blood pressure and time of year (systolic $P < 0.001$; diastolic $P < 0.001$), and to show that this association was largely explained by climatic factors (temperature and sunlight). **CONCLUSION:** * There was no pattern in PSA levels by time of year, air temperature or levels of sunlight in this cohort, so there is no need to take these factors into account when reviewing PSA results.

Source: <http://dx.doi.org/10.1111/j.1464-410X.2011.10174.x>

Resource Description

Exposure : ☒

weather or climate related pathway by which climate change affects health

Solar Radiation, Temperature

Temperature: Fluctuations

Geographic Feature: ☒

resource focuses on specific type of geography

Climate Change and Human Health Literature Portal

Urban

Geographic Location: ☒

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : United Kingdom

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Cancer, Cardiovascular Effect, Other Health Impact

Cardiovascular Effect: Other Cardiovascular Effect

Cardiovascular Disease (other): blood pressure

Other Health Impact: Prostate health

Population of Concern: A focus of content

Population of Concern: ☒

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified